

# (12) UK Patent Application (19) GB (11) 2 165 489 A

(43) Application published 16 Apr 1986

(21) Application No 8424328

(22) Date of filing 26 Sep 1984

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(51) INT CL<sup>4</sup>  
B41F 27/14 27/02

(52) Domestic classification  
B6C 616 621 626 656 657 679 MA

(56) Documents cited  
GB 1469253 GB 1422275

(58) Field of search  
B6C

## (54) Mounting printing plates

(57) A magnetic printing plate assembly comprises a printing cylinder having at least two saddles or shims mounted thereon. Each saddle/shim has at its leading end a manually releasable retaining member 19 for retaining the folded leading end of the printing plate. The saddles or shims magnetically attract the plate. Hook formation 26 on plate 24 engages under web 23 of the retainer. By pushing down on web 22, the hook is released and the plate end springs out.

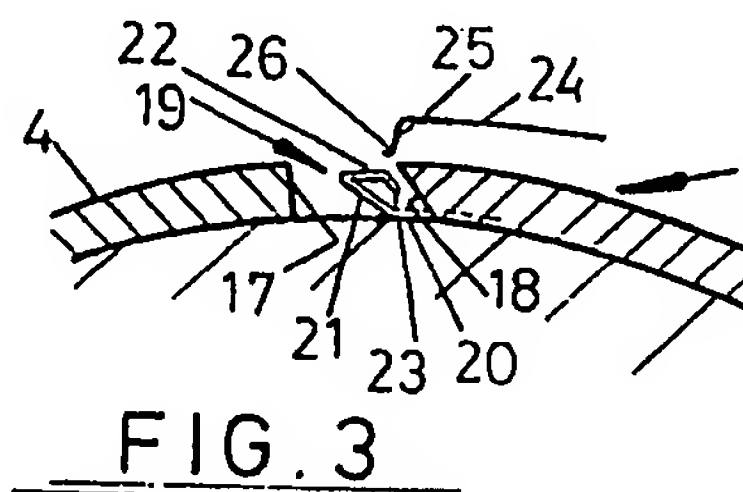


FIG. 3

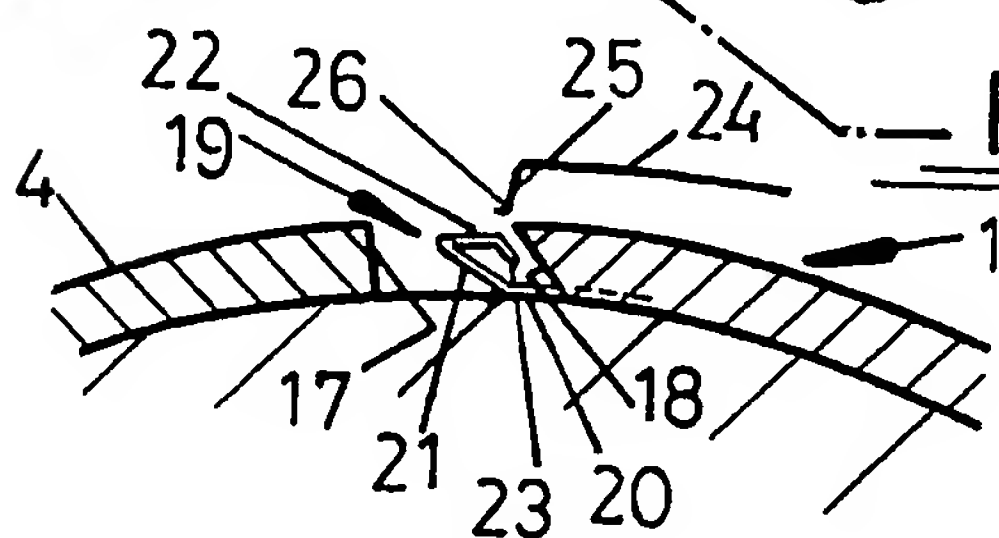
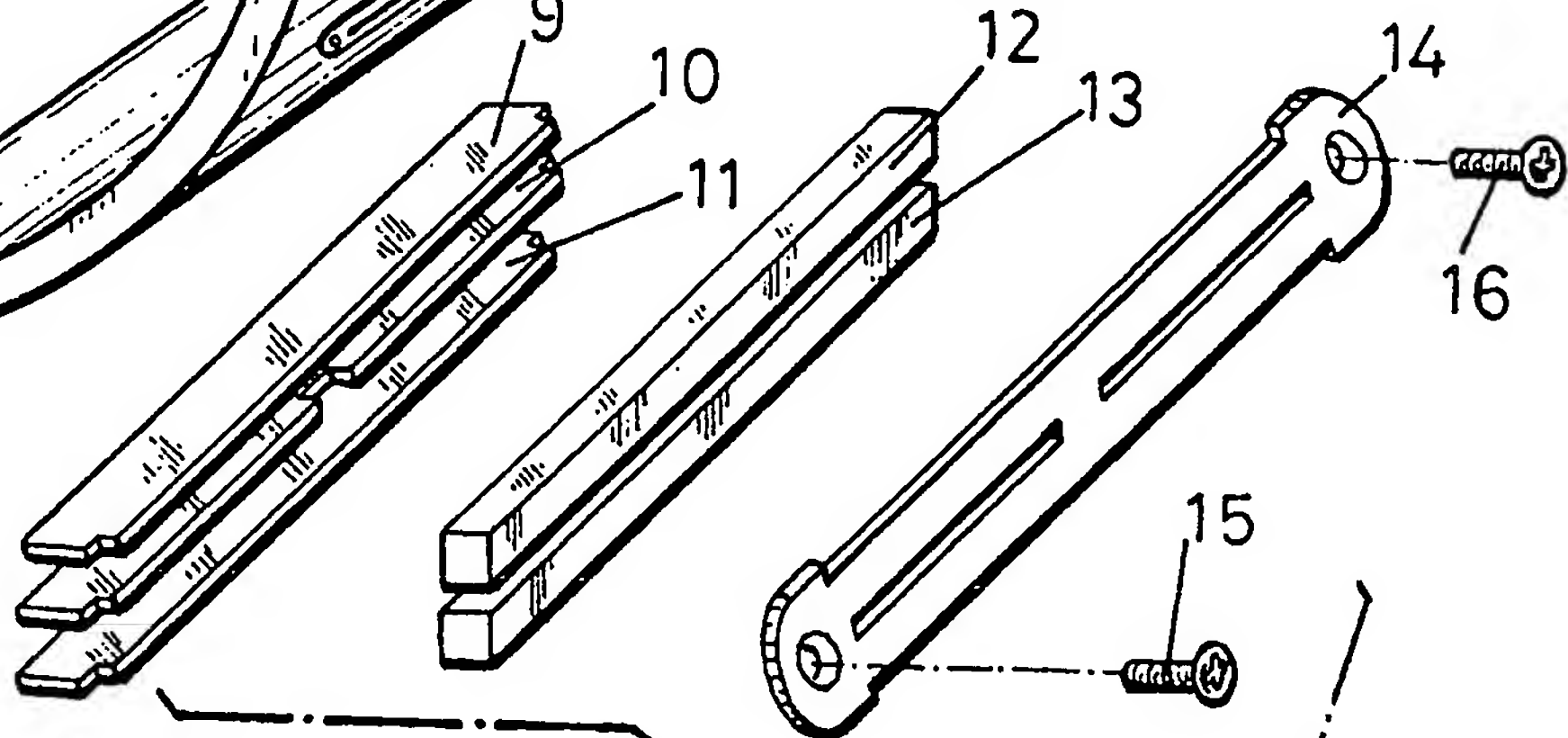
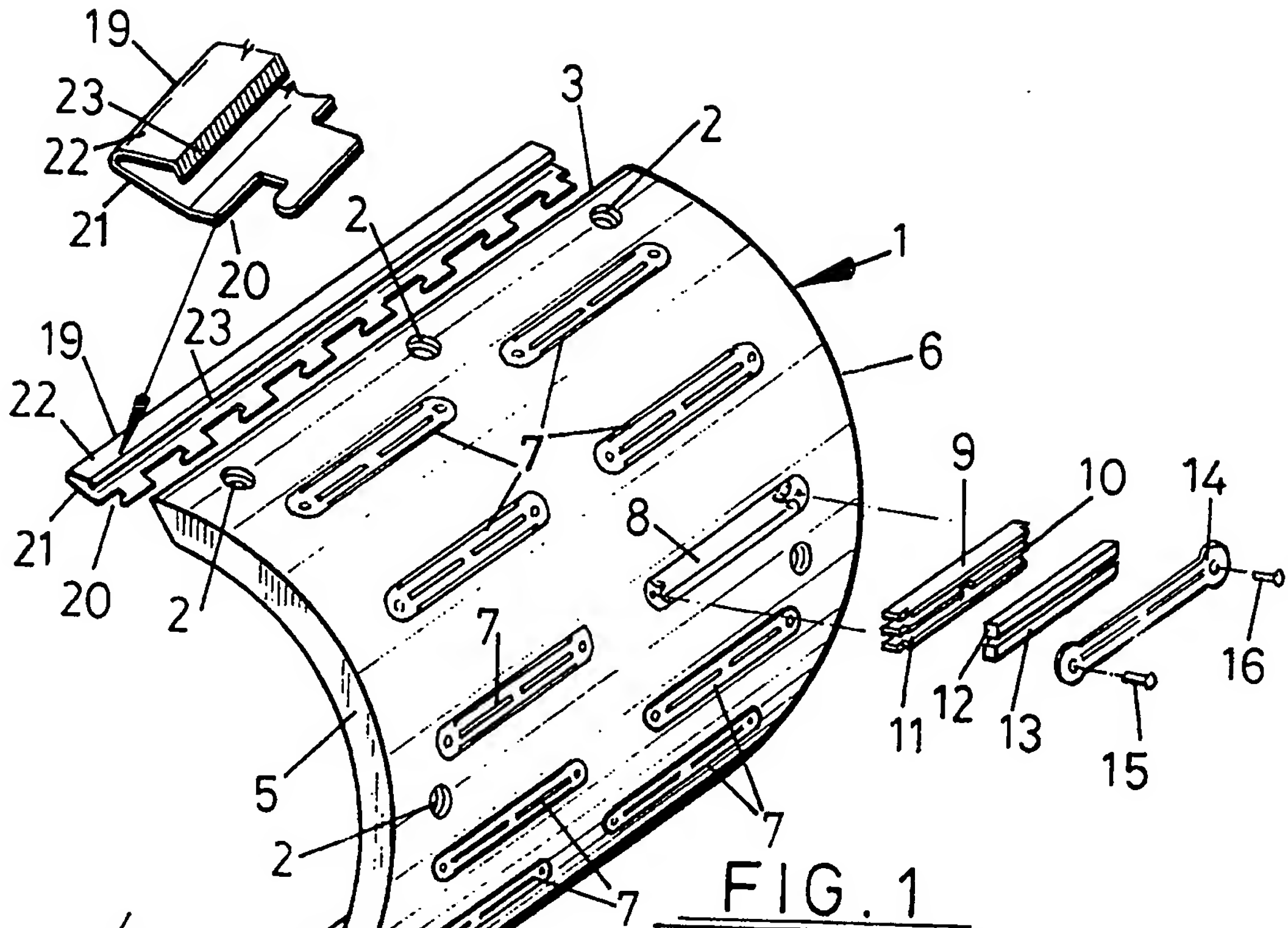


FIG. 3

## SPECIFICATION

## Improvements in or relating to securement of printing plates to printing cylinders

5 This invention relates to the securement of printing plates to printing cylinders.

With the advent of thin flexible printing plates the standard printing cylinder of a conventional  
10 printing machine is fitted with fixed or removable spacers known as shims or saddles respectively having a thickness corresponding to the outmoded lead stereo-type printing plates and having curved outer surfaces overlaid in use by the flexible print-  
15 ing plate which is fixed in position by retaining means at the leading end and a lock-up mechanism at the trailing end thereof. Such saddle/shim assemblies are well known and require no further description. On completion of the printing opera-  
20 tion, it is necessary to remove the printing plate from the associated saddle/shim and this is accomplished by stopping the printing cylinder (i.e. the entire press) at a first angular position enabling the operator to release the trailing end of the printing  
25 plate from its lock-up mechanism. The geometry of the printing press requires that the printing cylinder then be rotated through about three-quarters of a revolution into a second angular position in which the leading and trailing ends of the same  
30 saddle/shim are just on the operator's side of adjacent roller nips thus enabling the printing plate to be removed from the trailing end of the saddle/shim (from which it has already been released) and from the retaining means at the leading end of the  
35 saddle/shim.

It will be evident that this mode of plate removal is awkward and wasteful of press operating time. It has therefore been proposed to provide a magnetic saddle/shim having powerful magnets distributed  
40 over the outer surface thereof for holding a flexible printing plate firmly in position. No lock-up mechanism is required at the trailing end of the saddle/shim and the forward end of the saddle/shim is undercut for engagement by the permanently back-  
45 wardly folded front end of the metal printing plate. Such an arrangement has the advantage that the printing cylinder only needs to be stopped once (in a position corresponding to the second position described above) for removing the printing plate  
50 from the cylinder. However, removal of the printing plate from the leading end of the saddle/shim requires a special tool for engaging a lip at the folded end of the printing plate so as to prise this end off the undercut end of the saddle/shim. The  
55 use of a special tool is undesirable in that its inexperienced use wastes time and may cause damage to equipment. Furthermore even expert use of the tool will usually damage the printing plate that is being stripped and this may be a disadvantage in  
60 some cases where reusability of plates is desired.

It has been previously proposed to overcome the disadvantages of the known design by providing the saddle/shim with a pivotal leading end portion which can be swung upwardly to release the lead-  
65 ing end of the printing plate. This is an expensive

solution as regards manufacture of the saddle/shim and a special tool is still required for effecting the pivotal movement.

70 It is an object of the present invention to obviate or mitigate the aforesaid disadvantages of the magnetic assembly.

According to the present invention there is provided a magnetic printing plate assembly comprising a printing cylinder having at least two saddles  
75 or shims mounted thereon each saddle/shim having at its leading end a manually releasable retaining member for retaining the folded leading end of the printing plate. The leading end of the printing plate is preferably folded substantially at right angles to the body of the plate and has a projecting  
80 lip which hooks onto the retaining member of the retaining element by hand pressure enables the leading end of the printing plate to spring out of retaining engagement by the saddle/shim.

85 The invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:-

*Figure 1* is an exploded view of one embodiment of magnetic shim for use in the invention;

90 *Figure 2* is an enlarged view of a magnet assembly shown in exploded view in *Figure 1*, and

*Figure 3* is a diagrammatic cross section of the printing cylinder illustrating the use of a magnetic shim as shown in *Figure 1*.

95 Referring now to the drawings, the exemplary shim comprises a near semi-cylindrical plate 1 with holes 2 for fixing bolts (not shown) at its leading end 3, trailing end 4 and side edges 5, 6. Distributed over the outer surface of the shim 1 are mag-  
100 net assemblies 7 arranged in two rows parallel to the side edges 5, 6 of the shim 1. The magnet assemblies are located in respective recesses, e.g. as shown at 8 in *Figure 1*, and comprise three pole  
105 pieces 9, 10 (with a central recess) and 11 with intermediate bar magnets 12, 13 covered in the assembled condition by a cover plate 14 having side  
110 recesses and centre slots for receiving the edge regions of the pole pieces 9, 10 and 11. The cover plate 14 is held in position by screws 15, 16. The construction and arrangement of the magnet as-  
115 sembles is not an important feature of the invention and alternative constructions and arrangements may be used without departing from the scope of the invention.

As illustrated in *Figures 1* and 3, the trailing end 4 of the shim 1 (which is in fact a different shim in  
120 *Figure 3*) has an end face 17 which is perpendicular to the outer surface of the shim. As explained above, no special retaining means for the printing plate needs to be provided at this trailing end 4. The leading end 3 of the shim 1 has an undercut  
125 end face 18 as is conventional. Fitted to this leading end is a retaining member 19 having a base 20 with a profiled edge providing projections fitting into correspondingly shaped recesses (not shown)  
130 in the underside of the leading end 3 of the shim 1. The profiled edge of the retaining member 19 is pushed into the recesses and then shifted lengthwise and locked in position. The exposed part of the retaining member 19 is accommodated in a re-

cess between the leading end 3 of the shim 1 and the trailing end 4 of the adjacent shim (Figure 3).

The retaining member 19 is integrally formed from spring steel and comprises a forwardly and upwardly angled web 21 turning back to form a ledge 22 just below the level of the outer surface of the shim 1 and terminating in a folded edge 23 which is spaced from the undercut end face 18 of the shim 1, as shown in Figure 3.

10 The illustrated magnetic shim is used with a metal printing plate of which a leading end portion 24 is shown diagrammatically in Figure 3. The printing plate 24 has its front end 25 bent substantially at right angles to the body of the plate rather than being folded backwards to complement the undercut leading end face 18 of the shim 1. Close inspection of Figure 3 will reveal that the folded end 25 is in fact connected to the body of the plate by an angled portion which corresponds to a slight chamfer at the leading end of the outer surface of the shim 1. The folded end 25 of the printing plate 24 has a forwardly projecting lip 26 which is hooked under the folded edge 23 by turning the plate 24 anti-clockwise with respect to the position shown in Figure 3, inserting the folded edge 25 into the gap between the edge 23 and the end face 18 and then turning the plate back so that the lip 26 engages under the edge 23 and the body of the plate is applied to the outer surface of the shim 1.

30 When finger pressure is exerted downwardly on the ledge 22 of the retaining member 19, the folded edge 23 is deflected away from the end face 18 to release the lip 26 and allow the printing plate 24 to spring out of the gap between the edge 23 and the end face 18 because of the inherent springiness of the metal plate. When the pressure is removed the retaining member 19 springs back into the retaining position. It will be appreciated that insertion of the leading end 25 of the printing plate 24 is effected without the need to depress the ledge 22 but simply by manipulating the folded edge 25 to hook the lip 26 under the edge 23.

In the illustrated embodiment the retaining member 19 extends over the full effective width of the shim 1. In an alternative embodiment, two or more adjacent retaining members are arranged along this edge in order to facilitate the release operation.

It will be appreciated that in the case of a removable saddle assembly, the retaining member 19 may be attached to the underside of the saddle by suitable fasteners such as screws. In both shim and saddle assemblies the retaining member should be mounted in such a way that it can be easily replaced when necessary.

In a modification, the leading end face of the shim or saddle (18 in the drawings) is square i.e. perpendicular to the outer surface like the trailing end face. This has the advantage that the saddle/shim is not weakened at its leading end as in the conventional undercut design.

ing a printing cylinder having at least two saddles or shims mounted thereon each saddle/shim having at its leading end a manually releasable retaining member for retaining the folded leading end of the printing plate.

2. An assembly as claimed in claim 1, wherein the retaining member is adapted for hooking engagement by a lip projecting from the folded leading end of the printing plate, release of the retaining element by hand pressure enabling the leading end of the printing plate to spring out of retaining engagement by the saddle/shim.

3. An assembly as claimed in claim 2, wherein the retaining member is integrally formed from springing material and comprises a forwardly and upwardly angled web turning back to form a ledge just below the level of the outer surface of the shim and terminating in a folded edge which is spaced from the end face of the shim, said projecting lip of the printing plate hooking under said folded edge in use and finger pressure on said ledge sufficing to deflect the retaining member and release the printing plate.

4. An assembly as claimed in any one of the preceding claims, wherein the leading end face of the shim or saddle is perpendicular to the outer face thereof.

5. An assembly as claimed in any one of the preceding claims, wherein the outer surface of the shim or saddle is magnetic for the purpose of retaining the printing plate.

6. A magnetic printing plate assembly substantially as herein described with reference to the accompanying drawings.

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Printed in the UK for HMSO, D8818935, 2/86, 7102.  
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

## CLAIMS

65 1. A magnetic printing plate assembly compris-